

100-178



US005761834A

United States Patent [19]

Grim et al.

[11] Patent Number: 5,761,834

[45] Date of Patent: *Jun. 9, 1998

[54] FOOTGEAR WITH PRESSURE RELIEF ZONES

[75] Inventors: Tracy E. Grim, Broken Arrow, Okla.;
Kevin Richard O'Donnell, Thousand
Oaks; Eric Gerard Montag, Van Nuys,
both of Calif.

[73] Assignee: Royce Medical Company, Camarillo,
Calif.

[*] Notice: The portion of the term of this patent
subsequent to Feb. 16, 2013, has been
disclaimed.

[21] Appl. No.: 360,798

[22] PCT Filed: Feb. 16, 1994

[86] PCT No.: PCT/US94/01797

§ 371 Date: Jan. 6, 1995

§ 102(e) Date: Jan. 6, 1995

[87] PCT Pub. No.: WO94/18863

PCT Pub. Date: Sep. 1, 1994

Related U.S. Application Data

[63] Continuation-in-part of Ser. No. 17,818, Feb. 16, 1993, Pat.
No. 5,329,705.

[51] Int. Cl.⁶ A43B 13/38; A61F 5/00;
A61F 5/37

[52] U.S. Cl. 36/88; 36/93; 36/95; 36/110

[58] Field of Search 36/43, 44, 71,
36/88, 95, 93, 110, 140, 155; 602/23

[56] References Cited

U.S. PATENT DOCUMENTS

975,576 11/1910 Sexton 36/140

2,885,797	5/1959	Chrencik	36/91
2,909,854	10/1959	Edelstein	36/140
2,913,837	11/1959	Geuder	36/71
2,979,836	4/1961	Scholl	36/44
3,548,420	12/1970	Spence	36/71
3,859,740	1/1975	Kemp	36/71
4,100,686	7/1978	Sparlato et al.	36/29
4,408,402	10/1983	Looney	36/43
4,571,853	2/1986	Medrano	36/29
4,689,898	9/1987	Fahey	36/43
4,793,078	12/1988	Andrews	36/43
4,869,001	9/1989	Brown	
4,893,418	1/1990	Ogden	
5,078,128	1/1992	Grim et al.	602/23
5,154,682	10/1992	Kellerman	36/44
5,197,942	3/1993	Brady	602/23
5,329,705	7/1994	Grim et al.	36/88

Primary Examiner—M. D. Patterson

Attorney, Agent, or Firm—Oppenheimer Poms Smith

[57] ABSTRACT

Footgear with an inner sole (66) having a grid of removable resilient elements to permit removal of selected elements (68) to provide relief to ulcerated or injured areas of the foot. An air bladder (64) may underlie sole (66), preferably with additional cushioning material (40) within the air bladder. A walker (12) with a soft support (20) may be provided with the inner sole within the support. Some of the removal resilient elements may have a higher density or height than others. The footgear may include an adhesively-backed resilient pad (212) to provide additional support to a region. The footgear may include means for reducing shear stress on a bottom surface of the foot. An edema patch (240) may be provided for covering an open space (248) left after a user has removed a removable section from the grid. The edema patch applies pressure to the afflicted zone of the foot (250) preventing fluids from building up.

23 Claims, 11 Drawing Sheets

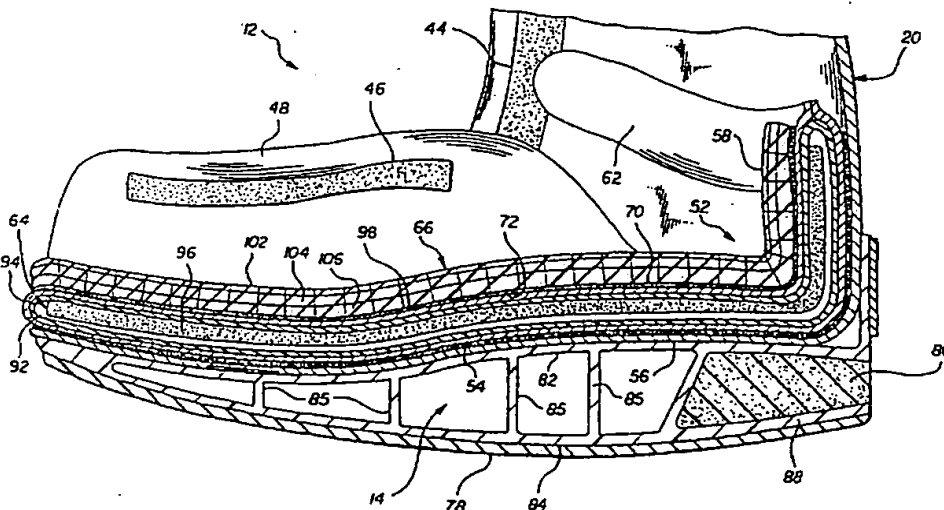


EXHIBIT A